

Increased Precision in Determining VISAR Velocity Coefficient. D.J. ERSKINE, Lawrence Livermore Nat. Lab.-- Previous formulism for the velocity per fringe coefficient of a velocity interferometer was based on the so-called "WAMI" condition, the configuration of maximum fringe contrast. This is attained when both source images in the interferometer beamsplitter are longitudinally spatially superposed. Due to incoherence between different portions of the surface of an extended source, high contrast fringes will not be produced otherwise. However, in modern VISARs with fiber optics, the small diameter of the fiber source relative to the distances between optics leads to better coherence of the wavefronts under the same longitudinal mis-superposition. Thus for these VISARs, the "WAMI" condition does not provide as precise localization of the mirror position. In contrast, the equal delay position of the interferometer can be found from white light fringes to a superior precision. We present the formalism appropriate to using the equal delay position as a reference point. The treatment for the coefficient δ , the Doppler induced change in refractive index is different.

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